PATENT

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Trudi Thompson

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Applicant	: Gregory G. Spanjers, et al.	Confirmation No.6147
Application No.	: 10/701,030	
Filed	: November 3, 2003	
Title	: DUAL-MODE CHEMICAL-ELECTRIC THRUSTERS FOR SPACECRAFT	
Grp./Div.	: 3746	
Examiner	: Unassigned	
Docket No.	: 51438/DJB/W382	

INFORMATION DISCLOSURE STATEMENT
37 CFR § 1.97(b)

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Post Office Box 7068
Pasadena, CA 91109-7068
February 3, 2005

Commissioner:

In compliance with the duty of disclosure under 37 CFR §§ 1.56, 1.97 and 1.98, and in accordance with the provisions in the Manual of Patent Examining Procedure §§ 609 and 707.05(b), enclosed is FORM PTO/SB/08A/B listing the references that are known to applicant. Copies of each of the references listed under "Other Documents" are enclosed. This filing is timely because it is made during one of the periods described in 37 CFR § 1.97(b).

It is respectfully requested that the listed references be considered in the examination of this application and identified on the list of references cited on the patent issuing for this application. Applicant also requests that an initialed copy of FORM PTO/SB/08A/B be entered

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Application No. 10/701,030

in the application file and returned to applicant with the next communication from the Office in accordance with MPEP § 609.

Respectfully submitted,
CHRISTIE, PARKER & HALE, LLP

By Cynthia A. Bonner
Cynthia A. Bonner
Reg. No. 44,548
626/795-9900

DJB/tt

Enclosures: PTO/SB/08A/B, w/references

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FORM PTO SB/08A/B (10-01) Substitute for PTO-1449A/B **INFORMATION DISCLOSURE** **STATEMENT BY APPLICANT** (use as many sheets as necessary)	**Attorney Docket Number**	**51438/DJB/W382**
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	Group Art Unit	3746
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U.S. PATENT DOCUMENTS

EXAMINER INITIALS	Cite No.[1]	DOCUMENT NUMBER Number - Kind Code[2] (If Known)	PUBLICATION DATE MM-DD-YYYY	NAME OF PATENTEE
		5,847,315	12-08-1998	Katzakian, Jr. et al.
		5,924,278	07-20-1999	Burton et al.
		6,153,976	11-28-2000	Spanjers
		US 6,269,629 B1	10-02-2001	Burton et al.
		US 6,373,023 B1	04-16-2002	Hoskins et al.

FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS	Cite No.[1]	Foreign Patent Document Country Code[3] - Number[4] - Kind Code[5] (If Known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	T[6] (✓)

OTHER DOCUMENTS

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		ALTMAN et al., "Chapter 7: Hybrid Rocket Propulsion Systems," Published in Space Technology Series: Space Propulsion Analysis and Design, McGraw-Hill, 1995, pp. 365-441, Cover pgs (2)
		ASHBY et al., "Quasi-Steady-State Pulsed Plasma Thrusters," AIAA Journal, Vol. 4, No. 5, May 1966, pp. 831-835
		ASTON et al., "Ignitor Plug Operation In A Pulsed Plasma Thruster," Journal of Spacecraft, Vol. 19, No. 3, May-June 1982, pp. 250-256
		BARBER et al., "Microthrusters Employing Catalytically Reacted N_2-O_2-H_2 Gas Mixtures, Tridyne," Journal of Spacecraft, Vol. 8, No. 2, February 1971, pp. 111-116
		BARTOLI et al., "A Liquid Caesium Field Ion Source For Space Propulsion," J. Phys. D: Applied Phys., Vol. 17, 1984, pp. 2473-2483
		BASSNER et al., "The Design of RITA Electric Propulsion System for Sat 2 (Artemis)," AIAA/DGLR/JSASS 21st International Electric Propulsion Conference, July 18-20, 1990, AIAA Paper No. 90-2539, pp. 1-7, Cover pg. (1)

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		BAYT et al., "A Performance Evaluation Of MEMS-Based Micronozzles," 33rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 7-9, 1997, AIAA Paper No. 97-3169, pp. 1-10, Cover pg. (1)
		BEATTIE et al., "Flight Qualification Of An 18-mN Xenon Ion Thruster," AIAA/AHS/ASEE Aerospace Design Conference, February 16-19, 1993, AIAA Paper No. 93-1085, pp. 1-7, Cover pg. (1)
		BERKOPEC, "Performance Of Two Subliming-Solid-Propellant Thrustor Systems For Attitude Control of Spacecraft," NASA Technical Note No. D-3841, February 1967, pp. 1-15, Cover pg. (1)
		BLANDINO et al., "Propulsion Requirements And Options For The New Millennium Interferometer (DS-3) Mission," 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 13-15, 1998, AIAA Paper No. 98-3331, pp. 1-11, Cover pg. (1)
		BROMAGHIM et al., "An Overview Of The On-Orbit Results From The ESEX Flight Experiment," 35th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, June 20-24, 1999, AIAA Paper No. 99-2706, pp. 1-13, Cover pg. (1)
		BROWN, C., "Spacecraft Propulsion, Chapter 1," AIAA Education Series, 1996, pp. 1-7, Cover pgs. (3)
		BROWN, C., "Spacecraft Propulsion, Chapter 3," AIAA Education Series, 1996, pp. 25-53, Cover pg. (1)
		BRYANT et al., "Planetary Lander Vehicles Utilizing LEAP Technology," 30th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, June 27-29, 1994, AIAA Paper No. 94-2748, pp. 1-7, Cover pg. (1)
		BURTON et al., "Energy Balance And Efficiency Of The Pulsed Plasma Thruster," 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 12-15, 1998, AIAA Paper No. 98-3808, pp. 1-10, Cover pg. (1)
		BURTON et al., "Pulsed Plasma Thruster," Journal of Propulsion and Power, Vol. 14, No. 5, September-October 1998, pp. 716-735
		BZIBZIAK, Sr., R. "Miniature Cold Gas Thrusters, AIAA/SAE/ASME/ASEE 28th Joint Propulsion Conference and Exhibit, July 6-8, 1992, AIAA Paper No. 92-3256, 7 pgs, Cover pg. (1)
		CRADDOCK et al., "Design And Development Of The Army KE ASAT ACS Thruster," AIAA/SAE/ASME/ASEE 29th Joint Propulsion Conference and Exhibit, June 28-30, 1993, AIAA Paper No. 93-1959, 6 pgs., Cover pg. (1)

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		CUBBIN et al., "Pulsed Thrust Measurements Using Laser Interferometry," Rev. Sci. Instrum., Vol. 68, No. 6, June 1997, pp. 2339-2346
		de GROOT et al., "Chemical Microthruster Options," 32nd AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 1-3, 1996, AIAA Paper No. 96-2868, pp. 1-16, Cover pg. (1)
		de GROOT et al., "Preliminary Results Of Solid Gas Generator Micro-Propulsion," 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 13-15, 1998, AIAA Paper No. 98-3225, pp. 1-9, Cover pg. (1).
		DRISCOLL et al., "Development Tests On A 5-LBF Bipropellant Thruster Using A Platinum/Rhodium Thrust Chamber," AIAA, 1998, pp. 1-11
		EBERT et al., "Operational Nova Spacecraft Teflon Pulsed Plasma Thruster System," AIAA/ASME/SAE/ASEE 25th Joint Propulsion Conference, July 10-12, 1989, AIAA Paper No. 89-2497, 10 pgs., Cover pg. (1)
		FEHRINGER et al., "Space-Proven Indium Liquid Metal Field Ion Emitters For Ion Microthruster Applications," 33rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 6-9, 1997, AIAA Paper No. 97-3057, pp. 1-11, Cover pg. (1)
		FLEETER, "Chapter 2: Propulsion-Or How To Get There," published in Micro Space Craft, The Edge City Press, 1995, pp. 7-43, Cover pg. (1)
		FORSYTHE, R., "Impulse And Thrust Test Of A Subliminating-Solid Micropropulsion System," NASA Technical Note No. D-3245, March 25, 1966, pp. 1-23, Cover pgs (2)
		GENOVESE et al., "Neutralization Tests Of A mN FEEP Thruster (Field Emission Electric Propulsion)," AIAA, ASME, SAE, and ASEE, Joint Propulsion Conference and Exhibit, 32nd, July 1-3, 1996, AIAA Paper No. 96-2725, pp. 1-6, Cover pg. (1)
		GORSHKOV, "Low-Power Hall Type And Ion Electric Propulsion For The Small Sized Spacecraft," 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 13-15, 1998, AIAA Paper No. 98-3929, pp. 1-8, Cover pg. (1)
		GREER et al., "Dynamic Performance Of A Subliming Solid Reaction Jet," 2nd International Conference on Automatic Control In Space 2, September 4-8, 1967, pp. 521-540, Cover pg. (1)
		GUMAN et al., "Exhaust Plume Studies Of A Pulsed Plasma Thruster," AIAA/DGLR 13th International Electric Propulsion Conference, April 25-27, 1978, AIAA Paper No. 78-704, pp. 1-8, Cover pg. (1)

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		GUMAN et al., "Pulsed Plasma Microthruster For Synchronous Meteorological Satellite (SMS)," AIAA 10th Electric Propulsion Conference, October 31-November 2, 1973, AIAA Paper No. 73-1066, pp. 1-9, Cover pg. (1)
		GUMAN et al., "Pulsed Plasma Microthruster Propulsion System For Synchronous Orbit Satellite," Journal of Spacecraft, Vol. 7, No. 4, April 1970, pp. 409-415
		HAAG, "PPT Thrust Stand," 31st AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 10-12, 1995, AIAA Paper No. 95-2917, pp. 1-12, Cover pg. (1)
		HARDT et al., "The Chemistry Of Subliming Solids For Micro Thrust Engines," Astronautica ACTA, Vol. 11, No. 5, September-October 1965, pp. 340-347, Cover pg. (1)
		HEISTER, S., "Chapter 6: Solid Rocket Motors," Space Propulsion Analysis And Design, McGraw-Hill, Inc., 1995, pp. 295-363, Cover pgs. (2)
		HELMY, A.M., "Chronicle Review Of The Hybrid Rocket Combustion," 30th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, June 27-29, 1994, AIAA Paper No. 94-2881, pp. 1-5, Cover pg. (1)
		HODGE et al., "Development And Test Of The ASAT Bipropellant Attitude Control System (ACS) Engine," AIAA/SAE/ASME/ASEE 29th Joint Propulsion Conference and Exhibit, June 28-30, 1993, AIAA Paper No. 93-2587, pp. 1-10, Cover pg. (1)
		HUBERMAN et al., "Advanced High-Thrust Colloid Sources," Journal of Spacecraft, Vol. 11, No. 7, July 1974, pp. 475-480
		JACOBSON et al., "Test Results Of A 200 W Class Hall Effect Thruster," 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 13-15, 1998, AIAA Paper No. 98-3792, pp. 1-9, Cover pg. (1)
		JANKOVSKY, R., "HAN-Based Monopropellant Assessment For Spacecraft," 32nd AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 1-3, 1996, AIAA Paper No. 96-2863, pp. 1-7, Cover pg. (1)
		JANKOVSKY et al., "Performance Of A FAKEL K10K Resistojet," 33rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 6-9, 1997, AIAA Paper No. 97-3059, pp. 1-11, Cover pg. (1)
		JONES, R., "Coffee-Can-Sized Spacecraft," Aerospace America, Vol. 26, No. 10, October 1988, pp. 36-38, Cover pg. (1)

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		JONES, R., "Electromagnetically Launched Micro Spacecraft For Space Science Missions," AIAA Aerospace Sciences Conference, January 11, 1988, AIAA Paper No. 88-0068, pp. 1-9, Cover pg. (1)
		JONES, R., "Microspacecraft Missions And Systems," Journal of the British Interplanetary Soc., Vol. 42, No. 10, October 1989, pp. 448-454, Cover pg. (1)
		JONES et al., "Microspacecraft Technology For Planetary Science Missions," undated, IAF Paper No. 91-051, pp. 1-10
		JONES, R., "Think Small - In Large Numbers," Aerospace America, Vol. 27, No. 10, October 1989, pp. 14-17, Cover pg. (1)
		KANNING, G., "Measured Performance Of Water Vapor Jets For Space Vehicle Attitude Control Systems," NASA Technical Note D-3561, August 29, 1966, pp. 1-24, Cover pg. (1)
		KETSDEVER et al., "The Free Molecule Micro-Resistojet: An Interesting Alternative to Nozzle Expansion," 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 13-15, 1998, AIAA Paper No. 98-3918, pp. 1-16, Cover pg. (1)
		KHAYMS et al., "Design Of A Miniaturized Hall Thruster for Microsatellites," 32nd AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 1-3, 1996, AIAA Paper No. 96-3291, pp. 1-7, Cover pg. (1)
		KIDD et al., "Life Test (4350 Hours) Of An Advanced Colloid Thruster Module," AIAA 10th Electric Propulsion Conference, October 31-November 2, 1973, AIAA Paper No. 73-1078, pp. 1-10, Cover pg. (1)
		KINDSVATER, H., "Simplified Space Mechanisms Using Subliming Solids," First Aerospace Mechanisms Symposium, May 19-20, 1966, pp. 239-249, Cover pg. (1)
		LAWRENCE et al., "Performance Testing Of A Resistojet Thruster For Small Satellite Applications," 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 12-16, 1998, AIAA Paper No. 98-3933, pp. 1-10, 4 pg. chart, Cover pg. (1)
		MacLELLAN et al., "Lincoln Experimental Satellites 5 And 6," AIAA 3rd Communications Satellite Systems Conference, April 6-8, 1970, AIAA Paper No. 70-494, pp. 1-11, Cover pg. (1)
		MAHONEY et al., "Electrohydrodynamic Ion Source," Journal of Applied Physics, Vol. 40, No. 13, December 1969, pp. 5101-5106
		MARCUCCIO et al., "Development Of A Miniaturized Field Emission Propulsion System", 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 13-15, 1998, AIAA Paper No. 98-3919, pp. 1-5, Cover pg. (1)

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		MARCUCCIO et al., "Flight Demonstration Of FEEP On Get Away Special," 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 13-15, 1998, AIAA Paper No. 98-3332, pp. 1-11, Cover pg. (1)
		MARRESE et al., "Chapter 11: Performance Of Field Emission Cathodes In Xenon Electric Propulsion System Environments," Progress in Astronautics and Aeronautics: Micropropulsion for Small Spacecraft, Vol. 187, pp. 271-302, Cover pg. (1)
		MARTINEZ-SANCHEZ et al., "Spacecraft Electric Propulsion - An Overview," Journal of Propulsion and Power, Vol. 14, No. 5, Sept/Oct 1998, pp. 688-699
		MAYCOCK et al., "A Photochemical Microrocket For Attitude Control," Journal Spacecraft, Vol. 6, No. 3, March 1969, pp. 336-337
		McFALL et al., "Pulsed Thruster Thrust Stand Measurement Evaluations," 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 12-15, 1998, AIAA Paper No. 98-3805, pp. 1-8, Cover pg. (1)
		McGRATH, D., "The History Of Thiokol STAR™ Motor Missions," 31st AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 10-12, 1995, AIAA Paper No. 95-3129, pp. 1-10, Cover pg. (1)
		McGRATH, D., "STAR™ Motors With Movable Nozzles," 31st AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 10-12, 1995, AIAA Paper No. 95-3020, pp. 1-8, Cover pg. (1)
		MEINHARDT et al., "Development And Testing of New, HAN-Based Monopropellants In Small Rocket Thrusters," 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 13-15, 1998, AIAA Paper No. 98-4006, pp. 1-10, Cover pg (1)
		MENDEL, et al., "Carbon Plasma Gun[9]," Rev. Sci. Instrum., Vol. 51, No. 12, December 1980, pp. 1641-1644
		MITTENDORF et al., "Experimental Development Of A Monopropellant For Space Propulsion Systems," 33rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 6-9, 1997, AIAA Paper No. 97-2951, pp. 1-9, Cover pg. (1)
		MITTERAUER, J., "Contamination Test Of A Cesium Field Ion Thruster," Journal of Propulsion, Vol. 7, No. 3, May-June 1991, pp. 364-367
		MITTERAUER, J., "Field Emission Electric Propulsion: Emission Site Distribution Of Slit Emitters," IEEE Transactions on Plasma Science, Vol. PS-15, No. 5, October 1987, pp. 593-598

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		MITTERAUER, J., "Miniaturized Liquid Metal Ion Sources (MILMIS)," IEEE Transactions on Plasma Science, Vol. 19, No. 5, October 1991, pp. 790-799
		MUELLER et al., "Chapter 8: Vaporizing Liquid Microthruster Concept: Preliminary Results Of Initial Feasibility Studies," Progress in Astronautics and Aeronautics: Micropropulsion for Small Spacecraft, Vol. 187, 2000, pp. 215-230, Cover pg. (1)
		MUELLER et al., "Chapter 12: Electric Breakdown Characteristics Of Silicon Dioxide Films For Use In Microfabricated Ion Engine Accelerator Grids," Progress in Astronautics and Aeronautics: Micropropulsion for Small Spacecraft, Vol. 187, 2000, pp. 303-334, Cover pg. (1)
		MUELLER et al., "Chapter 17: Micro-Isolation Valve Concept: Initial Results Of A Feasibility Study," Progress in Astronautics and Aeronautics: Micropropulsion for Small Spacecraft, Vol. 187, 2000, pp. 399-422, Cover pg. (1)
		MUELLER et al. "Design Of Tridyne Pressurization System For Liquid Oxygen/Polybutadiene Hybrid Rocket Motors," AIAA/SAE/ASME 27th Joint Propulsion Conference, June 24-26, 1991, AIAA Paper No. 91-2406, pp. 1-6, Cover pg. (1)
		MUELLER, J., "Thruster Options For Microspacecraft: A Review And Evaluation Of Existing Hardware And Emerging Technologies," 33rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 6-9, 1997, AIAA Paper No. 97-3058, pp. 1-29, Cover pg. (1)
		MYERS et al., "Pulsed Plasma Thruster Contamination," 32nd AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 1-3, 1996, AIAA Paper No. 96-2729, 13 pgs., Cover pg. (1)
		"NASA Contractor Report: Development Of The Subliming Solid Control Rocket: Phase II," Prepared by Rocket Research Corporation, Contract No. NAS 5-9070, NASA Report No. CR-712, 1967, pp. 1-104, 10 pg. Table of Contents, Cover pg. (1)
		"NASA Contractor Report: Subliming Solid Control Rocket: Phase 1," Prepared by Rocket Research Corporation, Contract No. NAS 5-3599NASA Report No. CR-711, 1967, pp. 1-151, 5 pg. Table of Contents, Cover pg. (1)
		OWENS, JR, W., "An Experimental Investigation Of Superheated Subliming Solid Thruster Performance," Journal of Spacecraft and Rockets, Vol. 8, No. 7, July 1971, pp. 806-809, Cover pg. (1)
		OWENS, JR, W., "Design Aspects Of Subliming Solid Reaction Control Systems," ICRPG/AIAA 3rd Solid Propulsion Conference, June 4-6, 1968, AIAA Paper No. 68-516, pp. 1-20, Cover pg. (1)

EXAMINER SIGNATURE		DATE CONSIDERED	

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FORM PTO/SB/08A/B (10-01) Substitute for PTO-1449A/B	**Attorney Docket Number**	**51438/DJB/W382**
INFORMATION DISCLOSURE	Application Number	10/701,030
STATEMENT BY APPLICANT	Filing Date	November 3, 2003
	Applicant(s)	Gregory G. Spanjers, et al.
(use as many sheets as necessary)	Group Art Unit	3746
	Examiner Name	Unassigned

OTHER DOCUMENTS		
EXAMINER INITIALS	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article, title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		PATTERSON M.J., "Low-Power Ion Thruster Development Status," 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 13-15, 1998, AIAA Paper No. 98-3347, pp. 1-12, Cover pg. (1)
		PEREL et al., "Air Force Electric Propulsion Programs," AIAA International Electric Propulsion Conference, November 14-17, 1976, AIAA Paper No. 76-1067, pp. 1-5, Cover pg. (1)
		PEREL, J., "Alkali Metal Ion Sources," J. Electrochem. Society: Reviews and News., Vol. 115, No. 12, December 1968, pp. 343C-350C
		PEREL et al., "Investigation Of The Capillaritron Ion Source For Electric Propulsion," AIAA/JSASS/DGLR 15th International Electric Propulsion Conference, April 21-23, 1981, AIAA Paper No. 81-0747, 6 pgs., Cover pg. (1)
		PEREL et al., "Research And Development Of A Charged-Particle Bipolar Thruster," AIAA Journal, Vol. 7, No, 3, March 1969, pgs. 507-511
		PETAGNA, et al., "Field Emission Electric Propulsion (FEEP): Experimental Investigation On Continuous And Pulsed Modes Of Operation," undated, Paper No. 88-127, pp. 708-721, Cover pg. (1)
		PFEFFER et al., "The Electric Propulsion Activities Of The European Space Agency": AIAA/ DGLR 13th International Electric Propulsion Conference, April 25-27, 1978, AIAA Paper No. 78-713, pp. 1-10, Cover pg. (1)
		ROSENBERG et al., "New Generation Of High-Performance Engines For Spacecraft Propulsion, Journal of Propulsion and Power, Vol. 10, No. 1, Jan-Feb. 1994, pp. 40-46
		RUDOLPH et al., "Pulsed Plasma Thruster Backflow Characteristics," AIAA/SAE/ASME 15th Joint Propulsion Conference, June 18-20, 1979, AIAA Paper No. 79-1293, pp. 1-8, Cover pg. (1)
		RUDOLPH et al., "Pulsed Plasma Thruster Contamination Studies," Princeton/AIAA/DGLR 14th International Electric Propulsion Conference, October 30-November 1, 1979, AIAA Paper No. 79-2106, pp. 1-8, Cover pg. (1)
		RUTTLE et al., "Development of Miniature 35-LBF Fast Response Bipropellant Divert Thruster," AIAA/SAE/ASME/ASEE 29th Joint Propulsion Conference and Exhibit, June 28-30, 1993, AIAA Paper No. 93-2585, pp. 1-2, Cover pg. (1)
		SCHAUB et al., "Spacecraft Formation Flying Control Using Mean Orbit Elements," Astrodynamics 1999: Part I: Advances in the Astronautical Sciences, Proceedings of the AAS/AIAA Astrodynamics Conference, August 16-19, 1999, Vol. 103, pp. 163-181, Cover pg. (1)

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OTHER DOCUMENTS

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		SCHILLING et al., "Micropropulsion Options For The TechSat21 Space-Based Radar Flight," Progress in Astronautics and Aeronautics, undated, Vol. 187, pp. 3-23, Cover pg. (1)
		SCHWENDE et al., "New Generation Of Low-Thrust Bi-Propellant Engines In Qualification Process," AIAA/SAE/ASME/ASEE 29th Joint Propulsion Conference and Exhibit, June 28-30, 1993, AIAA Paper No. 93-2120, pp. 1-10
		SCIULLI et al., "Self Consuming Satellite Program," AIAA Space Technology Conference & Exposition, September 28-30, 1999, AIAA Paper No. 99-4480, pp. 1-6, Cover pg. (1)
		SELLERS et al., "A Low-Cost Propulsion Option For Small Satellites," Journal of the British Interplanetary Society, Vol. 48, No. 3, March 1995, pp. 129-138, Cover pg. (1)
		SPANJERS et al., "Effect Of Propellant Temperature On Efficiency In The Pulsed Plasma Thruster," Journal of Propulsion and Power, Vol. 14, No. 4, July-August 1998, pp. 545-553
		SPANJERS et al., "Investigation Of Propellant Inefficiencies In A Pulsed Plasma Thruster," 32nd AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 1-3, 1996, AIAA Paper No. 96-2723, pp. 1-11, Cover pg. (1)
		SPANJERS et al., "PPT Research At AFRL: Material Probes To Measure The Magnetic Field Distribution In A Pulsed Plasma Thruster," 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 12-15, 1998, AIAA Paper No. 98-3659, pp. 1-15, Cover pg. (1)
		SPANJERS et al., "Propellant Losses Because Of Particulate Emission In A Pulsed Plasma Thruster," Journal of Propulsion and Power, Vol. 14, No. 4, July-August 1998, pp. 554-559
		STAEHLE, "Small Planetary Missions For The Space Shuttle," American Astronautical Society Publication, Space Shuttle: Dawn of an Era, October 29-November 1, 1979, Los Angeles, California, Paper No. 79-288, Vol. 41, Part II, pp. 918-938, Cover pgs. (2)
		STRAND et al., "Extended Duty Cycle Testing Of Spacecraft Propulsion Miniaturized Components," 31st AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 10-12, 1995, AIAA Paper No. 95-2810, 11 pgs., Cover pg. (1)
		SUTHERLAND et al, "A Review Of Microrocket Technology: 10^{-6} to 1 LBF Thrust," Journal Spacecraft and Rockets, Vol. 3, No. 8, August 1966, pp. 1153-1165
		TINLING, B., "Measured Steady-State Performance Of Water Vapor Jets For Use In Space Vehicle Attitude Control Systems," NASA Technical Note D-1302, May 1962, pp. 1-21, Cover pg. (1)

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		TURCHI et al., "Optimization Of Pulsed Plasma Thrusters For Microsatellite Propulsion," 35th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, June 20-24, 1999, AIAA Paper No. 99-2301, pp. 1-15, Cover pg. (1)
		VONDRA et al., "Flight Qualified Pulsed Electric Thruster For Satellite Control," Journal of Spacecraft, Vol. 11, No. 9, September 1974, pp. 613-617
		WERNIMONT et al., "Hydrogen Peroxide Hybrid Rocket Engine Performance Investigation," 30th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, June 27-29, 1994, AIAA Paper No. 94-3147, 7 pgs., Cover pg. (1)
		WICHMANN et al., "Miniature High Performance Delta V Engine," AIAA/SAE/ASME/ASEE 29th Joint Propulsion Conference and Exhibit, June 28-30, 1993, AIAA Paper No. 93-2582, pp. 1-5, Cover pg. (1)
		WILLIAMS et al., "Performance Testing Of A Solid Propellant Pulsed Plasma Microthruster," AIAA 9th Electric Propulsion Conference, April 17-19, 1972, AIAA Paper No. 72-460, pp 1-16, Cover pg. (1)
		YOUNG et al., "Investigation Of A Candidate Non-Magnetic Ion Micro-Thruster For Small Spacecraft Applications," 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 13-15, 1998, AIAA Paper No. 98-3917, pp. 1-13, Cover pg. (1)

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